

## Contrast

The gradation of luminance in gray scale or color measure, which can be expressed as the relative luminance with respect to adjacent region of the scene. Note that a pattern an imaging device (CCD camera, human eye, etc.) produces is the reconstruction of the contrast of *or* in the object. Human eye can distinguish about 50 grades of gray scale contrasts in moderately illuminated scene. Rayleigh defined that 34% gray value difference is necessary for resolving two adjacent lines positioned at near diffraction-limited distance. This measure is used as for Modulation-Transfer Function (MTF) by modern microscope manufactures.

An example of gray-scale contrast is illustrated as the color bars below.

